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FITCH EVEN TABIN AND FLANNERY
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SUITE 1600
CHICAGO, IL 60603-3406

EXAMINER

CHAU, COREY P

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2644

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Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-5, and 17-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 20030109286 to Hack et al. (hereafter as Hack) in view of U.S. Patent No. 6215655 to Heady et al. (hereafter as Heady).

3. Regarding Claim 1, Hack discloses an intelligent multi-media display communication system comprising: a flexible substrate having first and second portions (i.e. the display system 106 is fabricated on a flexible substrate, where the first portion can be read as the portion where the flexible active display is disposed and the second portion can be read as the portion where the flexible audio transducer is disposed) (Fig. 2; page 5, paragraph 0051 and 0052; page 6, paragraph 0066); a flexible active display (110) supported by the first flexible substrate portion; and a flexible audio transducer (123) proximally disposed with respect to the flexible active display (Fig. 2) and supported by the second flexible substrate portion. Hack does not expressly disclose an acoustic dampener operably coupled between the first flexible substrate portion and the second flexible substrate portion. Heady discloses speakers and/or microphones are largely isolated from potential vibration by surrounding them with

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vibration dampeners (abstract; claim 11). Therefore it would have been obvious to one having ordinary skill in the art to modify Hack with the teaching of Heady to incorporate vibration dampeners around the speaker and microphone in order to reduce vibration therefore reducing communication interference, which provides an acoustic dampener operably coupled between the first flexible substrate portion and the second flexible substrate portion (i.e. the vibration dampeners are surrounding the speaker and microphone, therefore reads on an acoustic dampener operably coupled between the first flexible substrate portion and the second flexible substrate portion).

4. Regarding Claim 3, Hack as modified discloses comprising at least a second flexible audio transducer (121) proximally disposed with respect to the flexible active display (Fig. 2)

5. Regarding Claim 4, Hack as modified discloses a flexible substrate that supports the flexible active display; and the flexible audio transducer; also supports the at least a second flexible audio transducer (i.e. the display system 106 is fabricated on a flexible substrate) (Fig. 2; page 5, paragraph 0051 and 0052; page 6, paragraph 0066).

6. Regarding Claim 5, Hack as modified discloses a plurality of flexible audio transducers (121,123) disposed substantially equidistant from one another about the flexible active display (Fig. 2).

7. Regarding Claim 17, Hack as modified discloses a selective rigidizer (113) disposed proximal to the flexible audio transducer (i.e. the rod 113 support the display system vertical) (Fig. 2).

8. Regarding Claim 18, Hack as modified discloses a rigid backing disposed at least partially coextensively with the flexible audio transducer (i.e. it is contemplated that the display substrate can be formed from a smart material that is flexible when the display 106 is retracted, but becomes rigid when the display 10 is extended)(page 5, paragraph 0051).

9. Regarding Claim 19, Hack as modified discloses a housing (102) and a retraction mechanism (113) disposed therein that is operably coupled to the flexible active display and the flexible audio transducer (Figs. 2 and 3A-C; page 5, paragraphs 0056 and 0058).

10. Regarding Claim 20, Hack discloses a method of forming a flexible combined display and speaker apparatus (i.e. intelligent multi-media display communication system)(Fig. 2), comprising: providing a flexible substrate having first and second portions (i.e. the display system 106 is fabricated on a flexible substrate, where the first portion can be reads as the portion where the flexible active display is disposed and the second portion can be reads as the portion where the flexible audio transducer is disposed); supporting a flexible active display (110) with the first flexible substrate portion; supporting a flexible speaker (123) with the second flexible substrate portion (Fig. 2; page 5, paragraph 0051 and 0052; page 6, paragraph 0066). Hack does not expressly discloses disposing an acoustic dampener between the first flexible substrate portion and the second flexible substrate portion. Heady discloses speakers and/or microphones are largely isolated from potential vibration by surrounding them with vibration dampeners (abstract; claim 11). Therefore it would have been obvious to one

having ordinary skill in the art to modify Hack with the teaching of Heady to incorporate vibration dampeners around the speaker and microphone in order to reduce vibration therefore reducing communication interference (i.e. the vibration dampeners are surrounding the speaker and microphone, therefore reads on an acoustic dampener between the first flexible substrate portion and the second flexible substrate portion).

11. Regarding Claim 21, Hack as modified discloses temporarily disposing the flexible substrate, and hence the flexible active display and the flexible speaker, in a non-planar configuration (Figs. 3A-C; page 5, paragraphs 0056 and 0058).

12. All elements of Claim 22 are comprehended by Claim 21. Claim 22 is rejected for the reasons stated above apropos to Claim 21.

13. All elements of Claim 23 are comprehended by Claim 21. Claim 23 is rejected for the reasons stated above apropos to Claim 21.

14. Regarding Claim 24, Hack as modified discloses folding the flexible substrate (i.e. alternatively, the display 106 can be formed such that it can be folded like a map and attached to either the interior or exterior of the housing 102) (page 5, paragraph 0056).

15. Regarding Claim 25, Hack discloses an integrated display and speaker (i.e. intelligent multi-media display communication system)(Fig. 2) comprising: flexible display (110) means for selectively providing an active display on a conformably flexible display surface; flexible speaker means (123) integrally configured with respect to the flexible display means for selectively providing audible sound (Fig. 2). Hack does not expressly disclose acoustic dampening means operably and integrally coupled

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between the flexible display means and the flexible speaker means. However it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide such acoustic dampening means operably and integrally coupled between the flexible display means and the flexible speaker means in order to reduce vibration therefore reducing communication interference, as taught by Heady (abstract; claim 11).

16. Regarding Claim 30, Hack as modified disclose a speaker 123 (i.e. first flexible audio transducer comprising a speaker) and a speaker 108, which is proximally disposed with respect to the flexible active display (Fig. 2). Hack as modified discloses a speaker 108, but only generally; no specific hardware or software is taught. However it would have been obvious to utilize a speaker such as the thin film speaker 123 as speaker 108, which is thin and flexible, therefore providing a speaker that would not occupy much space (i.e. second flexible audio transducer comprising a speaker). In addition, Hack discloses communication device 100 can also include one or more speakers.

17. Claims 6, 8, 9, 10, 11, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 20030109286 to Hack in view of U.S. Patent No. 6215655 to Heady as applied to claims 1, 3-5, and 17-25 above, and further in view of U.S. Patent Application Publication No. US 2003/0222334 to Ikeda et al. (hereafter as Ikeda).

18. Regarding Claim 6, Hack as modified discloses a flexible active display and a flexible audio transducer on a flexible substrate, but does not expressly disclose the flexible substrate comprises: a first flexible substrate that supports the flexible active display, and a second flexible substrate that supports the flexible audio transducer. However it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a first and second flexible substrates in order to provide desired structural properties for the flexible active display and the flexible audio transducer, as taught by Ikeda (page 5, paragraph 66).

19. Regarding Claims 8, 9, 10, and 11, Hack as modified discloses a dampener, but does not expressly disclose the dampener comprises a vacuum, or a discontinuous material, wherein the discontinuous material comprises a woven structure or a plurality of holes disposed through the material. However it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize any known types of dampener such as a vacuum, or a discontinuous material, wherein the discontinuous material comprises a woven structure or a plurality of holes disposed through the material.

20. Regarding Claims 12 and 13, Hack as modified discloses a first and second flexible substrate, but does not expressly discloses the first and second flexible substrate comprising a similar material or difference material. However it would have been obvious one having ordinary skill in the art at the time the invention was made to provide the first and second flexible substrate comprising a similar material or difference material in order to provide desired structural properties.

21. Claims 14-16 and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 20030109286 to Hack in view of U.S. Patent No. 6215655 to Heady as applied to claims 1, 3-5, and 17-25 above, and further in view of "Electroactive Polymer Artificial Muscles Acoustic Applications", by SRI International (hereafter as SRI International).

22. Regarding Claim 14, Hack as modified discloses a flexible audio transducer (123), wherein the flexible audio transducer is a thin film audio transducer that is thin enough and flexible enough so that the collapsible nature of the display is unaffected, but only generally; no specific hardware is taught. Therefore it would have been obvious to one having ordinary skill in the art to seek known flexible audio transducers. SRI International for example discloses dielectric elastomer electroactive polymer materials for use in a variety of applications, such as loudspeakers (i.e. audio transducer) comprising films of dielectric elastomer polymer, coated on both sides with a compliant electrode material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ any known flexible speaker, such as that of SRI International. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the flexible speaker of Hack with the teaching of SRI International to utilize a flexible audio transducer comprising films of dielectric elastomer polymer, coated on both sides with a compliant electrode material (i.e. flexible audio transducer is comprised of at least one layer of a dielectric elastomer polymer material).

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23. All elements of Claim 15 are comprehended by Claim 14. Claim 15 is rejected for the reasons stated above apropos to Claim 14.

24. All elements of Claim 16 are comprehended by Claim 14. Claim 16 is rejected for the reasons stated above apropos to Claim 14.

25. Claim 26 is essentially similar to Claim 14 and is rejected for the reasons stated above apropos to Claim 14.

26. Claim 27 is essentially similar to Claim 15 and is rejected for the reasons stated above apropos to Claim 15.

27. Claim 28 is essentially similar to Claim 16 and is rejected for the reasons stated above apropos to Claim 16.

28. All elements of Claim 29 are comprehended by Claims 14 and 16. Claim 29 is rejected for the reasons stated above apropos to Claims 14 and 16.

Response to Arguments

29. Applicant's arguments filed 8/29/05 have been fully considered but they are not persuasive.

30. In response to applicant's argument that "Hack and Ikeda relate to devices with flexible support substrates and Heady relates to a drive-in ordering apparatus that includes a rigid support substrate. Regarding the claims as amended by this response, there is also nothing in any of the cited references to suggest that one skilled in the art would combine the reference to utilize an acoustic dampener between different portions of a support substrate, much less different portions of a flexible support substrate", the

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test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Heady discloses any speakers and/or microphone are **largely isolated from potential vibration by surrounding them with vibration dampeners**. See abstract; claim 11. In addition, the term "portion" has not limit the claims because a first portion can be read as the portion where the flexible active display is disposed and a second portion can be read as the portion where the flexible audio transducer is disposed.

31. With respect to Applicant's argument on page 10, stating that "the proposed combination would create an audio device surrounded by a dampening substance, which would be entirely within the portion of the substrate that supports the audio device. The proposed combination does not disclose a dampening substance operably coupled between portions of the support substrate", has been noted. However the Examiner respectfully disagree. Applicant has not clearly definite "first and second portion" in the claims and can be interpret as many things such as the first portion is the portion where the flexible active display is disposed and a second portion is the portion where the flexible audio transducer is disposed. The first and second portions can be any size or shape, wherein the size and shape can be the same as the flexible audio transducer. Therefore the speaker and microphone is surrounded by a vibration dampener in order to reduce vibration, wherein "surround" does not limit the size and

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shape of the vibration dampener, which can be place to be "operably coupled between the first flexible substrate portion and the second flexible substrate portion".


Conclusion

32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey P. Chau whose telephone number is (571)272-7514. The examiner can normally be reached on Monday - Friday 9:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

September 8, 2005
CPC


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